Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
	)	
Modification of Parts 2 and 15 of the	)	ET Docket No. 03-201
Commission's Rules for unlicensed devices	)	
and equipment approval.	)	

COMMENTS OF THE INFORMATION TECHNOLOGY INDUSTRY COUNCIL

The Information Technology Industry Council (ITI) welcomes this opportunity to provide comments in this very important matter to the information technology sector. ITI represents the top U.S. providers of information technology (IT) products and services. ITI is the voice of the high tech community, advocating policies that advance U.S. leadership in technology and innovation, open access to new and emerging markets, support e-commerce expansion, protect consumer choice, and enhance the global competitiveness of its member companies.

A. Proposed Revisions to Part 15

1. Advanced Antenna Technologies

ITI supports the Commission proposal to allow point-to-multipoint systems using sectored antennas to operate with higher transmit power as long as the power complies with the existing field strength requirements established in applicable sections of Part 15.

2. Replacement Antennas for Unlicensed Devices

ITI supports the streamlining of antenna approvals under Section 15.203. We believe the Commission's proposal will not increase interference to other services in this band or to those adjacent bands. However, ITI is concerned that the Commission has not addressed the issue of antenna connectors, specifically the FCC requirement in Section 15.203 for a unique connector.

As stated earlier in previous filings and comments, there are no connectors that are truly unique or readily unavailable. Cost factors are a concern and therefore multiple radio vendors will use the same connectors to reduce cost. ITI supports the industry view that this rule requirement should not be applicable to these devices and in fact the rule adds additional costs to the end user with no demonstrable benefit. ITI supports and urges the Commission to remove the unique connector requirements for devices operating under Sections 15.247 and 15.407 of the FCC technical rules.

Another antenna issue not addressed is the requirement for an integral antenna for systems operating under Section 15.407(a) of the technical rules. As stated in our previous filings, requirements for maximum antenna gain, indoor use restrictions, and restrictions on transmitter output power are adequate to protect the Mobile Satellite Services (MSS). The additional requirement of an integral antenna required for UNII devices does not provide any additional protection for MSS services. The integral antenna requirement does add additional costs with no discernable benefit to the spectrum or end user.

3. Flexible Equipment Authorization for Radio Transmission Systems

ITI supports the general concepts of addressing third party amplifiers under Section 15.204 of the rules. However, ITI members have engineering concerns with one part of the proposal. ITI agrees that there should be a more effective and streamlined method to approving these amplifiers with certified radio systems. Based on our discussions with the FCC we generally support the approach being discussed. The regulations for these amplifiers must ensure that the products, once certified, will comply with the spectrum requirements at a system level.

ITI has a concern with the proposal authorizing third party wireless internet service providers (WISPs) to substitute equivalent amplifiers in the field. From an engineering perspective, we cannot support substituting one amplifier certified in conjunction with a system for another amplifier that has not gone through a thorough engineering review and testing with the system.

During engineering evaluations of various amplifiers, though some are rated the same, the amplifiers do produce significantly different RF emission profiles both in and out of band. Unlike antennas, some of these systems will produce extremely high emissions without a transmitter connected. In essence, changing a third party amplifier is equivalent to changing the final stage of the transmitter chain. Under Section 2.1043 of the current FCC regulations, this requires a Class I or Class II Permissive Change at a minimum. ITI has concerns with the Commission allowing a third party to change the equivalent of the final active stage of a certified system and not requiring any testing, certification, or an engineering review. If a manufacturer changes the design internally with a different final stage amplifier, they are required to retest and recertify the system.

ITI believes that substituting one certified third party amplifier with another certified third party amplifier requires a Class I or II Permissive change.

Therefore, ITI does not support the substitution of third party amplifiers without testing and urges the Commission to disapprove the use of third party amplifiers without an engineering evaluation per the requirements listed under Section 2.1043 of the FCC regulations for Permissive changes.

ITI also asks the Commission to clarify how to inform the professional installer that a test of the system is required before operation is allowed. We are concerned about the belief by some that professionally installed systems do not require testing.

In discussing professional installer, we note that the FCC has asked for a definition of professional installer. Referencing our filing during the FCC 02-312 proceeding on Part 15, we discussed with the FCC the adoption of a definition in line with the industry recognized Unlicensed Wireless Systems Installer Certification program by the National Association of Radio and Telecommunications Engineers (NARTE). Several other filings on this from WCA, Cisco, and Agere supported these comments and it is our understanding that NARTE did meet with the Commission to answer questions on the program. ITI stands in support of the comments filed by NARTE in that proceeding and urges the Commission to adopt the industry definition of a professional installer especially in light of the increasing burdens of compliance being placed on this undefined entity.

4. Measurement Procedures for Digital Modulation Systems

ITI strongly supports the proposal to align the testing procedures for digital transmission devices with those test procedures described in the NPRM for testing U-NII

devices.[1] ITI has raised this issue to the Commission before in several forums including several TCB training sessions. We believe that the measurement procedure for orthogonal frequency division multiplexing (OFDM) modulation for systems operating in the 2.4 GHz band should be the same procedures as required for OFDM type systems in 5 GHz bands. This will also streamline the testing process for systems using dual band radios since we will no longer be required to test using two different test methods.

5. Frequency Hopping Channel Space Requirements

Paragraph 30 of the NPRM states, "… an output power limit of no more than 125 mW is also appropriate for those systems that use more narrowly spaced channels than currently permitted." In line with previous Commission findings, we believe that this restriction will ensure that systems using the narrow-spaced, slightly wider hopping channels will not overcrowd the 2.4 GHz band with relatively high-power emissions."

We agree with these conclusions. However, the proposed text for Section 15.247 (a)(1) on page 25 of the NPRM states, "Frequency hopping systems in the 2.4 GHz band may have hopping channel carrier frequencies separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems employ fewer than 75 hopping channels and operate with an output power no greater than 125 mW."

This text includes the 125 mW power restriction, with which we agree, but introduces an additional constraint that the system must employ fewer than 75 hopping channels. The limitation on the maximum number of hopping channels does not seem to follow from the conclusions in paragraph 30 of the NPRM. Furthermore, we do not

[1] See 47 C.F.R. §§ 15.407 (a)(4) – (a) (6)

believe that this limitation reduces interference between different systems; in fact, reducing the number of hopping channels can under some circumstances make interference worse because the transmitted energy is concentrated in a smaller portion of the available 2.4 GHz spectrum. We also note that the current generation Bluetooth system uses up to 79 hopping channels and it is very desirable for the same number of channels to be available for next generation Bluetooth systems for reasons of backwards compatibility.

Therefore, we propose the following change to the draft text for Section 15.247 (a)(1), "Frequency hopping systems in the 2.4 GHz band may have hopping channel carrier frequencies separated by a minimum of 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW."

We believe that this change has no adverse impact on interference between systems and would allow a Bluetooth system operating with the next generation Bluetooth modulation scheme to use the same number of hopping channels as current generation Bluetooth systems.

The added requirement in Section 15.247(e) states, "The peak output power and peak power spectral density for digitally modulated system may be determined in accordance with the provisions specified in Sections 15.407(a)(4) and 15.407(a)(5)." We understand this added requirement is intended to harmonize the peak output power and peak power spectral density. Regarding the peak power spectral density, FCC proposes that digitally modulated devices are now required by Sections 15.247(d).

6. Part 15 Unlicensed Modular Transmitter Approvals

ITI strongly supports proposed changes to the modular approval process. Over the past two years ITI has advocated for the inclusion of the modular approval requirements in the Commission's rules. We further support the future use of the Part 15 concept for module approval to eventually be used as a guideline for radio modules operating under other sections of the FCC rules.

ITI has also been advocating updating the original requirements to address newer technologies such as portioned modules[2] and SAR[3] issues. ITI supports the proposal from Wi-Fi filing on this subject addressing the certification requirements of these portioned module devices.

7. Improving Sharing in the Unlicensed Bands

The Commission's Part 15 regime has proven successful. By allowing innovation to flourish with minimal government regulation, spectrum that was just several years ago considered unusable for high bandwidth communication is now one of the bright spots of the IT and communications sectors. A growing number of businesses and consumers use high-speed unlicensed devices for local and personal-area connectivity. And innovative companies are now beginning to deploy unlicensed devices to *create* "last-mile" networks, rather than simply to extend them at the edge of the network.

As unlicensed devises are used for "last-mile" broadband networking, however, customers will expect and demand that those networks be reliable. If an always on last-mile

[2] ITI encourages the Commission to work with industry to establish an appropriate test methodology for verifying the integrity of the radio module partitioned, looking at the efficacy of whether an already existing standard can be utilized, or if a new test methodology must be developed.

[3] The Commission has addressed SAR issues for modules in NPRM 03-137. ITI has filed comments on this proceeding including comments addressing SAR for module approval.

broadband network routinely fails to operate for brief periods of time because of interference, it will degrade the usefulness of the service for high-bandwidth applications, such as video or audio streaming. Yet unlicensed devices, as defined by FCC rules, must accept interference from other unlicensed devices. At some point, however, interference can degrade the operations of any wireless device. A challenge for policy makers is to ensure that the interference environment permits unlicensed broadband devices to operate with great reliability.

The current Part 15 rules, for all their success, permit an especially difficult interference environment for the current generation of broadband devices. Under the existing rules it could be difficult to achieve the reliability expected by consumers from an unlicensed "last-mile" broadband network.

It is, therefore, appropriate for the Commission to identify likely interference problems and explore possible solutions from both a technological and a regulatory perspective. The Commission must be careful to avoid any action that would have an adverse impact on innovation, and to the maximum extent possible rely on market forces to develop solutions to the problem of interference. In addition, as the Commission suggests, one issue worthy of further exploration is the possible designation of certain unlicensed bands for especially efficient and reliable operation.[4] Identifying and reducing interference, and thereby ensuring reliability, will help to bring ubiquitous wireless broadband networking a step closer to reality. If this can be accomplished without impeding innovation, the public interest will be served.

[4] *NPRM* at ¶ 43-45.

B. Proposed Revisions to Part 2

1. Import Conditions

ITI supports the Hewlett Packard position referenced in the NPRM pages 15 and 16, under paragraphs 47-53. Current methods for product development often rely on foreign manufacture of all engineering prototypes as well as final product. However, the importation limits shown in Section 2.1204 of the Commission's rules do not take this into account, and these limits are far too small to enable current product development processes. ITI encourages the Commission to revise these limits to better facilitate the IT product development process used today.

2. Electronic Filing

ITI supports the changes to Part 2 in updating the requirements for electronic filing. ITI believes that electronic filing speeds up application processes and therefore supports the Commission in further streamlining their process to reduce cost and increase efficiency.

3. Accreditation of Test Laboratories

Paragraph 57 of the NPRM states that the FCC feels that all accreditations should be re-evaluated by Accrediting Bodies every two years. We agree with this proposal.

The proposed changes in the text of Section 2.948 deal with Section 2.948(d) which covers laboratories testing for the Declaration of Conformity process. The proposed new text for this section includes the requirement for re-evaluation of laboratories by Accrediting Bodies every two years, but calls out ISO Guide 25 as the standard to which the laboratories should be evaluated. ISO Guide 25 has been replaced by ISO/IEC 17025 and the reference in the proposed text should be changed to reflect this. It is noted that the Final Rule for ET Docket Nos. 01-278 and 95-19; FCC 03-149

published in the Federal Register Volume 68, page 68544 on December 9, 2003 and effective January 8, 2004 has already incorporated this proposal. However, the title of ISO/IEC 17025 must still be changed to "General requirements for the competence of testing and calibration laboratories."

CONCLUSION

ITI appreciates the opportunity to provide our views in this important proceeding. We urge the Commission to adopt these changes on an expedited basis. ITI believes the adoption of these changes will promote more efficient sharing of unlicensed spectrum and streamline regulations on devices operating in this spectrum.

ITI looks forward to continuing to work with the Commission on these important issues.

Respectfully submitted,

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